

REMARKS

Claims 27-40 were cancelled, and Claims 1-26 are currently pending in the present application, none of which have been amended.

Applicant notes with appreciation the Examiner's indication that Claims 3-12 and 17-26 would be allowable if they were rewritten in independent form including all of the limitations of the base claim and any respective intervening claims.

Rejection under 35 U.S.C. § 103

Claims 1 and 13-15 were rejected under 35 U.S.C. § 103(a) as being unpatentable over *Stikvoort et al.* (US 2004/0125240) in view of *Kroeger* (US 5,828,705). Applicant respectfully traverses such rejection.

Claim 1 recites "a complex sinusoid signal IFLO, coupled to said down converter, for providing a complex sinusoid signal to said down converter." Similarly, amended Claim 15 now recites a step of "providing a complex sine wave for down converting said in-phase IF signal and said quadrature IF signal." On page 3 of the Final Office Action, the Examiner states that the claimed complex sinusoid signal IFLO is not disclosed by *Stikvoort*, but the Examiner then asserts that it is disclosed by *Kroeger* as numerically controlled oscillator **210** in Figure 2.

Assuming *arguendo* that numerically controlled oscillator **210** can be construed as the claimed complex sinusoid signal IFLO, numerically controlled oscillator **210** cannot be combined with the receiver as disclosed by *Stikvoort* to render the claimed invention obvious. This is because *Stikvoort*'s IF mixer **13** in Figure 1, for example, receives a non-complex sine wave from local oscillator **3**. On the other hand, *Kroeger*'s baseband waveform signal entering complex multiplier **200** is a complex signal (col. 3, lines 30-32). Thus, *Kroeger*'s complex multiplier **200** can be substituted for *Stikvoort*'s IF mixer **13**.

Claim 1 (and similarly Claim 15) also recites "a down conversion controller, coupled to said complex sinusoid signal IFLO, for adjusting a complex sine wave within said down converter

via said complex sinusoid signal IFLO." On page 3 of the Final Office Action, the Examiner asserts that the claimed down conversion controller is disclosed by *Kroeger* as local control circuit **270** in Figure **2**. Local control circuit **270** is illustrated in details in Figure **6** of *Kroeger*. As shown in Figure **6**, local control circuit **270** has four outputs, namely, BOOST, SNR, ERR and LOCK. The LOCK output is connected to a filter **250**. The BOOST, SNR and ERR outputs are connected to a slope limiter **280**, which in turn provides another ERR output. The purpose of slope limiter **280** is to reduce unintentional phase noise in the ERR signal attributed to the carrier tracking loop (col. 10, lines 52-54). In addition, none of the BOOST, SNR and ERR outputs from the local control circuit **270** is for adjusting complex sine waves. Thus, it is clear that local control circuit **270** cannot be used to adjust "a complex sine wave within said down converter via said complex sinusoid signal IFLO," as claimed.

Claims 2 and 16 were rejected under 35 U.S.C. § 103(a) as being unpatentable over *Stikvoort et al.* (US 2004/0125240) in view of *Kroeger* (US 5,828,705) and *Fulghum* (US 6,728,326). Applicant respectfully traverses such rejection.

Claim 2 (and similarly Claim 16) recites "said LO frequency control module alternately down-converts a channel frequency on a frame-by-frame basis." On page 4 of the Office Action, the Examiner asserts that the claimed features were suggested by *Fulghum* in col. 4, lines 48-51. Col. 4, lines 48-51 of *Fulghum* states that "signal processor **12** cooperates with the control and signaling unit **14** and receiver **18** during initial signal reception to synchronize with the slot timing of the transmitted signal." Thus, *Fulghum* teaches the initial synchronization process; however, *Fulghum* does not teach or suggest "alternately down-converts a channel frequency on a frame-by-frame basis" (emphasis added), as claimed.

Because the claimed invention recites novel features that are not found in the cited references, whether considered separately or combined, the § 103 rejection is believed to be overcome.

CONCLUSION

Claims 1-26 are currently pending in the present application. For the reasons stated above, Applicant believes independent Claims 1 and 15 along with their respective dependent claims are distinguished over the cited references under § 103, and should be in condition for allowance. The remaining prior art cited by the Examiner, but not relied upon, has been reviewed and is not believed to show or suggest the claimed invention.

No fee or extension of time is believed to be necessary; however, in the event that any fee or extension of time is required for the prosecution of the present application, please charge it against Dillon & Yudell Deposit Account No. **50-3083**.

Respectfully submitted,



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